

SEQUENCE LISTING

<110> INSERM

<120> IL-11 muteins

<130> 960-47

<140> 10/565,626

<141> 2006-01-24

<150> PCT/EP04/009165

<151> 2004-07-29

<150> US 60/490,525

<151> 2003-07-29

<160> 90

<170> PatentIn version 3.3

<210> 1

<211> 199

<212> PRT

<213> Homo sapiens

<400> 1

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr

115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 2  
<211> 199  
<212> PRT  
<213> Macaca fascicularis

<400> 2

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Gly Ser Pro Arg Ala Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 3  
<211> 199  
<212> PRT  
<213> Mus musculus

<400> 3

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg

100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 4  
<211> 199  
<212> PRT  
<213> Rattus norvegicus

<400> 4

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 5  
<211> 165  
<212> PRT  
<213> Homo sapiens

<400> 5

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 6  
<211> 165  
<212> PRT  
<213> Macaca fascicularis

<400> 6

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 7  
<211> 165  
<212> PRT  
<213> Mus musculus

<400> 7

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 8  
<211> 165  
<212> PRT  
<213> Rattus norvegicus

<400> 8

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 9  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<220>  
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<222> (148)..(148)  
<223> X = A, V, L, I, F, M, P, W

<220>  
<221> MISC\_FEATURE  
<222> (152)..(152)  
<223> X = A, V, L, I, F, M, P, W

<400> 9

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 10  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 10

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 11  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 11

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu

130

135

140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 12  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 12

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 13  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 13

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 14  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

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<223> X = A, V, L, I, F, M, P, W

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<223> X = A, V, L, I, F, M, P, W

<400> 14

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 15  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 15

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu

115

120

125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 16  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 16

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 17  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 17

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 18  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 18

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu

100                    105                    110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115                    120                    125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130                    135                    140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145                    150                    155                    160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165                    170                    175

Arg Leu

<210> 19  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<220>  
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<222> (182)..(182)  
<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (186)..(186)  
<223> X = A, V, L, I, F, M, P, W

<400> 19

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1                    5                    10                    15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser  
20                    25                    30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35                    40                    45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe

50

55

60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 20  
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<220>  
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<400> 20

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 21  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 21

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 22  
<211> 199  
<212> PRT  
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<220>  
<223> IL-11 mutein

<400> 22

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 23

<211> 199

<212> PRT  
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<220>  
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<400> 23

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu

<210> 24  
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<220>  
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<223> X = A, V, L, I, F, M, P, W

<220>  
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<223> X = A, V, L, I, F, M, P, W

<400> 24

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 25  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 25

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 26  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 26

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 27  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 27

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu

<210> 28  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 28

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg  
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln  
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala  
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 29  
<211> 178  
<212> PRT  
<213> Artificial

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<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (165)..(165)  
<223> X = A, V, L, I, F, M, P, W

<400> 29

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr  
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 30  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 30

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr  
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 31  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 31

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr  
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Leu Pro Pro Asp Pro Ala Pro Pro Leu Ala Pro Pro Ser

130

135

140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 32  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 32

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala  
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr  
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu  
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu  
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130   135   140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145   150   155   160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165   170   175

Arg Leu

<210> 33  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 33

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala  
1   5   10   15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr  
20   25   30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp  
35   40   45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu  
50   55   60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu  
65   70   75   80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser  
85   90   95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu  
100   105   110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115   120   125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser  
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 34  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

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<222> (182)..(182)  
<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (186)..(186)  
<223> X = A, V, L, I, F, M, P, W

<400> 34

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 35  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 35

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe

50

55

60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 36  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 36

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 37  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 37

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 38  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 38

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser  
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg  
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr  
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro  
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 39

<211> 165

<212> PRT  
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<223> IL-11 mutein

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<222> (148)..(148)  
<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (152)..(152)  
<223> X = A, V, L, I, F, M, P, W

<400> 39

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 40  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 40

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu

<210> 41  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 41

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 42  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 42

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 43  
<211> 165

<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 43

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 44  
<211> 178  
<212> PRT  
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<223> X = A, V, L, I, F, M, P, W

<220>  
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<223> X = A, V, L, I, F, M, P, W

<400> 44

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Lys Thr

165

170

175

Arg Leu

<210> 45  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 45

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 46  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 46

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 47  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 47

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 48  
<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 48

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu

145                    150                    155                    160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165                    170                    175

Arg Leu

<210> 49  
<211> 199  
<212> PRT  
<213> Artificial

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<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (186)..(186)  
<223> X = A, V, L, I, F, M, P, W

<400> 49

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1                    5                    10                    15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20                    25                    30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35                    40                    45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50                    55                    60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met  
65                    70                    75                    80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85                    90                    95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg

100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 50  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 50

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 51  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 51

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 52  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 52

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 53  
<211> 199  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 53

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser

20

25

30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 54  
<211> 165  
<212> PRT  
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<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (152)..(152)  
<223> X = A, V, L, I, F, M, P, W

<400> 54

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 55  
<211> 165

<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 55

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 56  
<211> 165  
<212> PRT  
<213> Artificial

<220>

<223> IL-11 mutein

<400> 56

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 57

<211> 165

<212> PRT

<213> Artificial

<220>

<223> IL-11 mutein

<400> 57

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 58  
<211> 165  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 58

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu  
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala  
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala  
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg  
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala  
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln  
85 90 95

Ala Arg Leu Glu Arg Leu Arg Arg Leu Gln Leu Leu Met Ser Arg  
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly  
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu  
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu  
145 150 155 160

Leu Lys Thr Arg Leu  
165

<210> 59  
<211> 178  
<212> PRT  
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<220>  
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<223> X = A, V, L, I, F, M, P, W

<220>  
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<222> (165)..(165)  
<223> X = A, V, L, I, F, M, P, W

<400> 59

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 60

<211> 178  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 60

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 61  
<211> 149  
<212> PRT  
<213> Artificial

<220>  
<223> IL-11 mutein

<400> 61

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser  
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<210> 62  
<211> 178  
<212> PRT  
<213> Artificial

<220>

<223> IL-11 mutein

<400> 62

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
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Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
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Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

<210> 63

<211> 178

<212> PRT

<213> Artificial

<220>

<223> IL-11 mutein

<400> 63

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala  
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr  
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp  
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu  
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu  
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro  
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu  
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu  
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala  
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu  
145 150 155 160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr  
165 170 175

Arg Leu

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<221> MISC\_FEATURE

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<223> X = A, V, L, I, F, M, P, W

<220>

<221> MISC\_FEATURE

<222> (186)..(186)

<223> X = A, V, L, I, F, M, P, W

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Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
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Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
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<210> 65  
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<212> PRT  
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<220>  
<223> IL-11 mutein

<400> 65

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
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Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met

130

135

140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
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Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
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<210> 66  
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<223> IL-11 mutein

<400> 66

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Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
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<210> 67  
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<223> IL-11 mutein

<400> 67

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
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Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

<210> 68  
<211> 199  
<212> PRT  
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<220>  
<223> IL-11 mutein

<400> 68

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro  
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Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser  
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser  
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe  
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met  
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg  
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg  
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala  
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met  
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro  
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala  
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu  
180 185 190

Leu Leu Leu Lys Thr Arg Leu  
195

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<211> 600  
<212> DNA  
<213> Homo sapiens

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<211> 498

<212> DNA

<213> Artificial

<220>

<223> IL-11 mutein

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<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC, CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

<220>

<221> misc\_feature

<222> (454)..(456)

<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC, CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

<400> 70

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<210> 71

<211> 537

<212> DNA

<213> Artificial

<220>

<223> IL-11 mutein

<220>

<221> misc\_feature

<222> (481)..(483)

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<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC,
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<220>
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<222> (493)..(495)
<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC,
      CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

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<210> 72
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<220>
<223> IL-11 mutein

<220>
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<222> (544)..(546)
<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC,
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<220>
<221> misc_feature
<222> (556)..(558)
<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC,
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Ala	Ser	Pro	Asp	Pro	Arg	Ala	Glu	Leu	Asp	Ser	Thr	Val	Leu	Leu	Thr
				20			25					30			

Arg	Ser	Leu	Leu	Ala	Asp	Thr	Arg	Gln	Leu	Ala	Ala	Gln	Leu	Arg	Asp
				35		40					45				

Lys	Phe	Pro	Ala	Asp	Gly	Asp	His	Asn	Leu	Asp	Ser	Leu	Pro	Thr	Leu
				50		55			60						

Ala	Met	Ser	Ala	Gly	Ala	Leu	Gly	Ala	Leu	Gln	Leu	Pro	Gly	Val	Leu
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Thr	Arg	Leu	Arg	Ala	Asp	Leu	Leu	Ser	Tyr	Leu	Arg	His	Val	Gln	Trp
				85		90				95					

Leu	Arg	Arg	Ala	Gly	Gly	Ser	Ser	Leu	Lys	Thr	Leu	Glu	Pro	Glu	Leu
				100		105			110						

Gly	Thr	Leu	Gln	Ala	Arg	Leu	Asp	Arg	Leu	Leu	Arg	Arg	Leu	Gln	Leu
				115		120			125						

Leu	Met	Ser	Arg	Leu	Ala	Leu	Pro	Gln	Pro	Pro	Asp	Pro	Pro	Ala	
	130				135				140						

Pro	Pro	Leu	Ala	Pro	Pro	Ser	Ser	Ala	Trp	Gly	Gly	Ile	Arg	Ala	Ala
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